1. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$25x^2 + 75x + 54 = 0$$

A. $x_1 \in [-1.86, -1.47]$ and $x_2 \in [-1.31, -1.15]$

B. $x_1 \in [-46.12, -44.27]$ and $x_2 \in [-30.08, -29.85]$

C. $x_1 \in [-2.51, -2.32]$ and $x_2 \in [-1.13, -0.83]$

D. $x_1 \in [-5.87, -4.97]$ and $x_2 \in [-0.5, -0.33]$

E. $x_1 \in [-10.18, -7.05]$ and $x_2 \in [-0.31, -0.04]$

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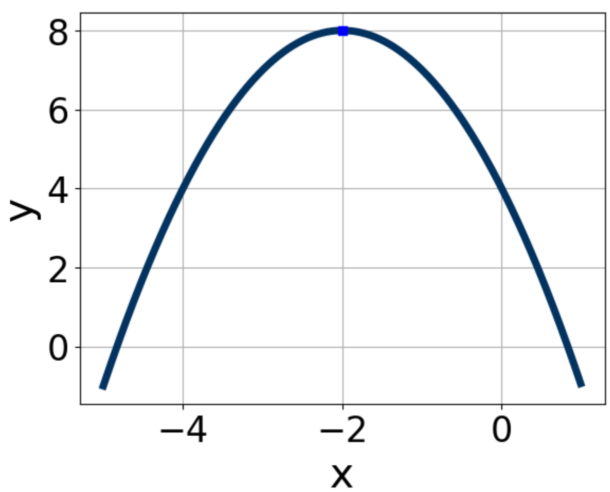
2. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that $a, b,$ and c belong to.



A. $a \in [-2, 0], \quad b \in [3, 8], \text{ and } \quad c \in [4, 5]$

B. $a \in [-2, 0], \quad b \in [3, 8], \text{ and } \quad c \in [-12, -10]$

C. $a \in [-2, 0], \quad b \in [-4, -1], \text{ and } \quad c \in [4, 5]$

D. $a \in [0, 2], \quad b \in [-4, -1], \text{ and } \quad c \in [9, 14]$

E. $a \in [0, 2], \quad b \in [3, 8], \text{ and } \quad c \in [9, 14]$

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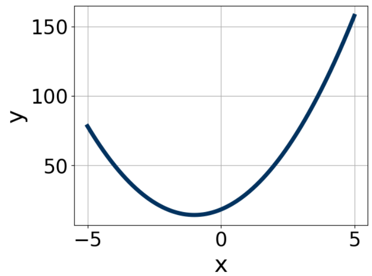
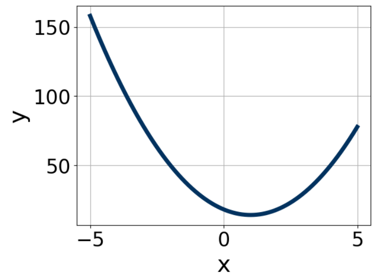
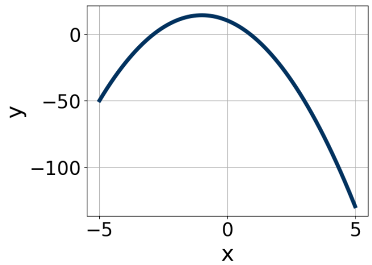
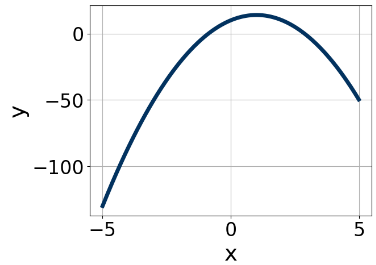
3. Graph the equation below.

$$f(x) = -(x + 1)^2 + 14$$

A. 

C. 

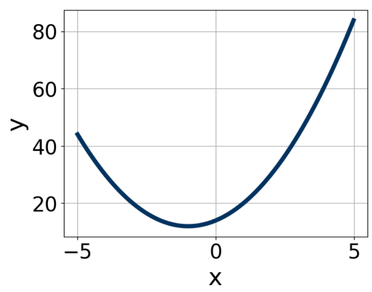
B. 

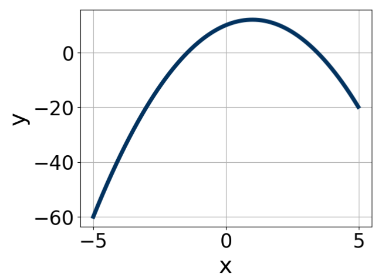
D. 

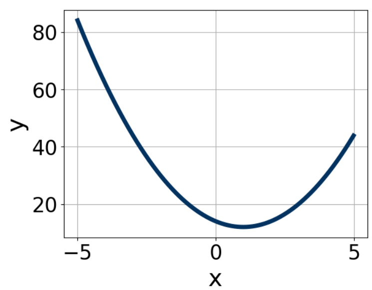
E. None of the above.

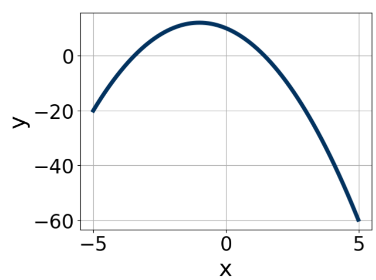
4. Graph the equation below.

$$f(x) = -(x + 1)^2 + 12$$

A. 

C. 

B. 

D. 

E. None of the above.

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5. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$25x^2 + 50x + 24 = 0$$

A. $x_1 \in [-2.76, -1.62]$ and $x_2 \in [-0.44, -0.18]$

B. $x_1 \in [-30.33, -29.48]$ and $x_2 \in [-20.15, -19.54]$

C. $x_1 \in [-1.53, -0.44]$ and $x_2 \in [-1.02, -0.8]$

D. $x_1 \in [-6.4, -5.95]$ and $x_2 \in [-0.27, 0.26]$

E. $x_1 \in [-2.06, -1.47]$ and $x_2 \in [-0.79, -0.45]$

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6. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$-19x^2 - 14x + 9 = 0$$

A. $x_1 \in [-1.79, -0.99]$ and $x_2 \in [-0.31, 0.65]$

B. $x_1 \in [-30.36, -29.59]$ and $x_2 \in [29.26, 30.14]$

C. $x_1 \in [-8.31, -6.86]$ and $x_2 \in [21.46, 22.28]$

D. $x_1 \in [-1.06, 0.8]$ and $x_2 \in [0.92, 1.45]$

E. There are no Real solutions.

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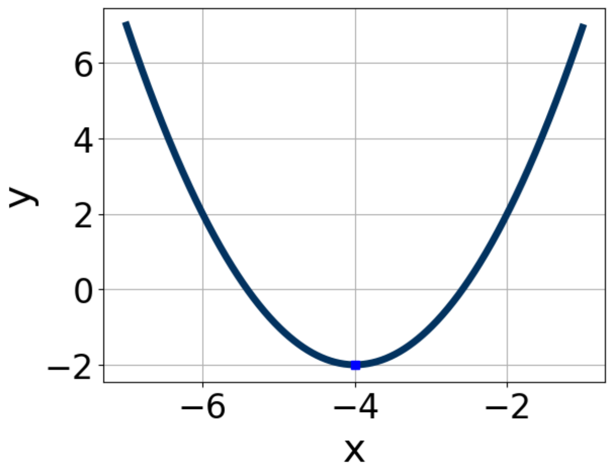
7. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-2.5, 0.6], \quad b \in [-9, -7], \text{ and } \quad c \in [-24, -15]$

B. $a \in [-2.5, 0.6], \quad b \in [5, 12], \text{ and } \quad c \in [-24, -15]$

C. $a \in [0.9, 1.5], \quad b \in [-9, -7], \text{ and } \quad c \in [13, 16]$

D. $a \in [0.9, 1.5], \quad b \in [-9, -7], \text{ and } \quad c \in [16, 22]$

E. $a \in [0.9, 1.5], \quad b \in [5, 12], \text{ and } \quad c \in [13, 16]$

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8. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$24x^2 - 10x - 25$$

A. $a \in [1.04, 2.41], \quad b \in [-10, 0], \quad c \in [10.5, 16.1], \text{ and } \quad d \in [1, 9]$

B. $a \in [2.66, 5.06], \quad b \in [-10, 0], \quad c \in [5.6, 7.2], \text{ and } \quad d \in [1, 9]$

C. $a \in [0.71, 1.26], \quad b \in [-32, -28], \quad c \in [-0.9, 2.2], \text{ and } \quad d \in [20, 28]$

D. $a \in [6.55, 8.23], \quad b \in [-10, 0], \quad c \in [1.4, 4.5], \text{ and } \quad d \in [1, 9]$

E. None of the above.

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9. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$36x^2 - 60x + 25$$

A. $a \in [-2.7, 2.9]$, $b \in [-31, -21]$, $c \in [0.57, 1.73]$, and $d \in [-34, -27]$

B. $a \in [2.2, 5]$, $b \in [-12, -3]$, $c \in [11.82, 13.04]$, and $d \in [-5, -4]$

C. $a \in [5.7, 6.1]$, $b \in [-12, -3]$, $c \in [5.25, 6.79]$, and $d \in [-5, -4]$

D. $a \in [16.7, 20.6]$, $b \in [-12, -3]$, $c \in [1.01, 3.29]$, and $d \in [-5, -4]$

E. None of the above.

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10. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$12x^2 - 14x - 3 = 0$$

A. $x_1 \in [-18.81, -16.92]$ and $x_2 \in [17.6, 20.1]$

B. $x_1 \in [-1.89, -0.28]$ and $x_2 \in [-0.9, 0.6]$

C. $x_1 \in [-1.19, 0.7]$ and $x_2 \in [1, 2.7]$

D. $x_1 \in [-2.47, -1.62]$ and $x_2 \in [14.5, 16.9]$

E. There are no Real solutions.
